



San Antonio Office



Laredo Office



Pharr Office

Drash Consulting Engineers, Inc. (DCE) is a multi-discipline consulting engineering firm poised to meet the increasingly complex technological challenges of our time. We strive to serve those clients that truly demand excellence by combining the skills of our professional and technical staff with innovative and proven technology to meet project goals and the needs of our clients. We take pride in the fact that our steady growth is built on client satisfaction which is based on our philosophy and reputation for providing innovative and practical engineering, quality services in a professional and timely manner, and personal and responsive attention to our clients and their needs. Our team of seasoned professional engineers and technicians has both the experience and innovation to produce technically sound, practical engineering recommendations and solutions on any project. Our management team, both seasoned and experienced, provides the continuity, coordination, communication, responsiveness, and quality control during the project to remain focused on our number one objective.... **your satisfaction.**

DCE, a Texas Corporation since 1992, is a moderately sized firm, yet our experienced staff of professionals allows us to service small and large projects. We are able to provide personal and principal attention to every project, a distinct and significant advantage in having a firm of our size to serve you. Our services include:

- Geotechnical Engineering
- Geologic Studies and Assessments
- Environmental Engineering and Consulting
- Construction Materials Engineering
- Construction Observation and Testing
- Feasibility Studies
- Transmission & Distribution (T&D) Line Design
- Foundation Design for T&D Structures
- Forensic Investigation and Studies
- Expert Witness Testimony
- Third Party Review

DCE provides these services to a diverse group of clients that include lending institutions, developers, engineers, architects, utility companies, government agencies, insurance companies, law firms, manufacturing industries, military, industrial-refining companies, property owners, contractors, retail-franchise companies, learning institutions, school districts, religious orders, and health care companies.



Northeast Baptist Hospital
San Antonio, Texas



Tesoro Petroleum Building
San Antonio, Texas

Our professional and technical staff has grown to include a permanent staff of more than 95 employees which include engineers, geologists, designers, engineering technicians, and administrators. Our principals and professional staff offer you technical expertise and diversity with numerous years of combined experience. DCE maintains full service offices in San Antonio, Laredo, and the Rio Grande Valley (Brownsville, Harlingen, and Pharr).

To maintain our commitment to sound engineering, quality of services, and responsive attitude to our clients, we maintain an excellent work environment, regularly maintained and calibrated field and laboratory equipment, an in-house quality assurance program, an extensive library, and a state-of-the-art computer network system.

We encourage and promote continuing education programs for our professional and technical employees so that we can stay in the mainstream of current standards of practice. DCE's professional staff is experienced in developing and presenting training seminars in their respective disciplines. Our principals and key officers serve on advisory boards and standards committees. The firm, as well as many of our professional and technical employees, are involved in and support various professional and technical organizations. These include:

- Air and Waste Management Association (AWMA)
- American Society of Civil Engineers (ASCE)
- American Society for Testing and Materials (ASTM)
- Associated General Contractors (AGC)
- Association of Soil and Foundation Engineers (ASFE)
- International Society of Soil Mechanics and Foundation Engineers (ISSMFE)
- Consulting Engineers Council (CEC)
- Professional Engineers in Private Practice (PEPP)
- Society of American Military Engineers (SAME)
- Texas Society of Professional Engineers (TSPE)

DCE is licensed as a corporation to provide its engineering and environmental services in the states of Texas and Oklahoma. Our licenses are:

Engineering Licenses:

- Texas – N° F-000288
- Oklahoma - N° CA 3194
- Alabama - No. CA-2302-E
- Arkansas - No. COA: 655

Environmental Licenses:

- Asbestos Consultant Agency No. 10-2343
- LPST Corrective Action Specialist N° RCAS00806

Accreditations:

- AASHTO Materials Reference Laboratory (AMRL);
- Cement and Concrete Reference Laboratory (CCRL);
- Texas Department of Health (TDH) Radiation Safety

DCE is certified as a Small Business Enterprise (SBE) through the South Central Texas Regional Certification Agency (SCTRCA), Certification N° 200110082. We are also certified through the State of Texas as a Historically Underutilized Business (HUB), Certificate No. 1742632772600, and a SBE through the Texas Department of Transportation.

We welcome the opportunity to work with you. Please contact a manager at one of our locations closest to you or your project.

4926 Research Drive
San Antonio, Texas 78240
(210) 641-2112
(800) 332-1728
Fax: (210) 641-2124

117 East Porte Court, Suite 3
Harlingen, Texas 78550
(956) 421-1055
(888) 298-7103
Fax: (956) 421-1053

615 Gale Street, Building B
Laredo, Texas 78041
(956) 729-1100
(866) 729-1100
Fax: (956) 791-1071

1786 Coffee Port Road
Brownsville, Texas 78521
(956) 547-9094
(888) 298-7103
Fax: (956) 547-7766

1506 Mid-Cities Drive
Pharr, Texas 78577
(956) 283-8254
(888) 298-7103
Fax: (956) 283-8279

Our corporate e-mail is drash@drashce.com

Visit our website at www.drashce.com

The following sections in this SOQ will provide you with a more in depth description and evaluation of our expertise and capabilities. We hope this document provides you with a clear understanding of our firm and the services we offer. If we have not addressed your specific needs, please contact us.



Calpine Power Station, Edinburg, TX

Selected List of Clients

H.E. Butt Grocery Company

Texas Department of Transportation

City of San Antonio

City of Edinburg

American Electric Power

Cotera Kolar Negrete Architects

Alamo Community College District

Beicker Engineering, Inc.

H. B. Zachary, Inc.

The University of Texas System (OFPC)

Cingular Wireless

Prodesco, Inc.

Project Control of Texas

Cavender & Hill Properties, Inc.

New Braunfels Utilities

CDS/Muery Services, Inc.

Bexar County Public Works

Taylor & Mullins, Inc.

Towers of Texas

City Public Service

Civil Engineering Consultants

San Antonio Independent School District

Southwest Texas State University

Brownsville Independent School District

Beaty Saunders Architects, Inc.



Harris Communications, San Antonio, TX

City of Laredo
Ziwa Corporation
Cobalt Construction Company
Architecto ▪ Mida
Sherfey Engineering
Labunski Associates Architects
Eller Media
Roberto Ruiz Architects
Tetra Tech/ASL Consulting Engineers
Texas Sterling
SBC Communications
Noe Garza Engineers
Atlee Development
Pharr San Juan Alamo Independent School District
City of Brownsville
Reliant Energy/H L & P
Turner Collie and Braden
Home Depot
Carter and Burgess
HNTB
Harlingen Consolidated Independent School District
Black & Veatch
Stanford Knowles Architects & Planners
Phil Howry Construction
Terry Ray Construction
Uvalde Independent School District
Wade Construction Company



Placement of concrete tilt-wall panels at the Royal Oak Boring Facility in San Antonio, TX

- Capitol Cement
- Comal Independent School District
- Northside Independent School District
- Sprinkle Robey Architects
- Brazos Electric Power Cooperative, Inc.
- Green Rubiano & Associates
- VIA Metropolitan Transit
- Hesson Andrews Sotomayor Architects
- City of McAllen
- Sprint PCS
- San Antonio Water System
- Pedernales Electric Cooperative, Inc.
- Gomez Mendez Saenz Architects
- Speegle & Associates: Architecture
- United Independent School District
- ProLogis Trust
- V•A Architecture
- Pritchard & Associates
- Williams Schneider Calvetti, Inc.
- Dashiell Corporation
- Bartlett Cocke Construction Company
- David & David Construction Company
- Kinnison and Associates
- San Antonio River Authority
- North East Independent School District
- Laredo Independent School District



LBJ Student Center and Parking Garage at Southwest Texas State University in San Marcos, TX

Company References

Beicker Engineering, Inc.

Mr. Davy Beicker, P.E.
2702 S. Loop 1604 E
San Antonio, Texas 78232
(210) 824-2908

CDS/Muery Services, Inc.

Mr. Kenneth Rothe, P.E.
3411 Magic Drive
San Antonio, Texas 78229
(210) 581-1111

H. E. Butt Grocery Company

Ms. Mary Rohrer, P.E.
464 South Main Avenue
San Antonio, Texas 78283
(210) 938-8185

Lockwood, Andrews and Newnam

Mr. Thomas Turk, P.E.
10101 Reunion Place, Suite 200
San Antonio, Texas 78216-4165
(210) 499-5082

Laredo Independent School District

Mr. Jorge Cabello, P.E.
900 East Lyon Street
Laredo, Texas 78042
(956) 795-3619

Green, Rubiano and Associates

Mr. Rolando Rubiano, P.E.
1220 W. Harrison
Harlingen, Texas 78550
(956) 428-4461

American Electric Power

Mr. Marvin Polasek, P.E.
212 East Sixth Street
Tulsa, Oklahoma 74119
(918) 599-2370

Towers of Texas

Mr. Joe D. Sullivan
HCR 1, Box 2000, Farm Road 534
Sandia, Texas 78383
(361) 547-9111

Texas Department of Transportation

Mr. Carlos Peralez, P.E.
District 21- Pharr
P.O. Box Drawer EE
Pharr, Texas 78577
(956) 702-6184



Computer Equipment

Drash Consulting Engineers, Inc. (DCE) is very proud of its **up-to-date** computer system. Shown below are our basic system and its components:

Typical Office Workstations:

- Compaq 2.0 Ghz Pentium IV w/256mb Ram
- Clone 1.7 Ghz AMD K7-Athlon w/256mb Ram
- Gateway 1.6 Ghz Pentium IV w/512mb Ram
- Gateway 1.0 Ghz Pentium III w/256 mb Ram
- Clone 600 mhz AMD K7-Athlon w/256 mb Ram
- Gateway 600 mhz Pentium III w/256 mb Ram
- Gateway 550 mhz Pentium III w/256 mb Ram
- Gateway 500 mhz Pentium III w/256 mb Ram
- Compaq 450 mhz Pentium III w/256 mb Ram

Company Software:

- Microsoft BackOffice Server 2000 / All Servers
 - Microsoft Windows 2000 / All Workstations
 - Norton Antivirus 2002 / All Workstations
 - Microsoft Office 2000 / All Workstations
 - AutoCad 2000 (Full version), MicroStation J (Full version)
 - PLS-Cad 2000 (Full version)
 - Gint (version 5.0), Lpile 4.0 (Full version)
 - DeLorme Street Atlas 9.0 and 3D-Topo, Maptech Topo maps
- Many more software titles that we use

San Antonio's Network System:

- Compaq Proliant ML530 File Server
- Dual 1.0 GHz Pentium III Processors w/2/Gb Ram
 - 54 Gb of storage with RAID-5/DLT 80Gb Tape Backup

Hewlett Packard CD-Server Tower

- 7 CD-Bays

Quantum Snap Server 2000 Data Storage

- 20gb of storage

Harlingen's Network System:

- Compaq Proliant 1600 File Server
- 500 Mhz Pentium III Processor w/512mb Ram
 - 27 Gb of storage with Raid-5/Dat3 tape backup

Laredo's Network System:

- Compaq Prosignia 740 File Server
- 350 Mhz Pentium II Processor w/384mb Ram
 - 18.2 Gb of storage/Dat3 tape

Pharr's Network System:

- Compaq ML350 File Server
- 1000 Mhz Pentium III Processor w/512mb Ram
 - 2/18.2 Gb of storage

Brownsville's Network System:

- Compaq EXS/815 P III Server
- 1000 Mhz Pentium III Processor w/512mb Ram
 - 38.2 Gb of storage

Typical Office Printers:

- Savin 9955DP Printer & Copier w/Mailbox & Finisher
- Savin 2545P Printer & Copier w/Finisher
- Savin 9945DPE Printer & Copier w/Finisher
- Hewlett Packard LaserJet 4000N & 4100N w/ 32mb Ram
- Hewlett Packard Laserjet 5000N w/64mb Ram
- Hewlett Packard Color DeskJet CP1700 Pro Series
- Hewlett Packard Color LaserJet 4500N w/128mb Ram
- Hewlett Packard LaserJet 4 & 4M Series Printers w/16 mb Ram
- Hewlett Packard DesignJet 430 w/32mb Ram (plotter)

Company Network & Internet Communications:

- Linksys 10/100 Ethernet switches & Fiber optic backbone
- Running Cat 5e Ethernet 10/100 for Printers & Workstations
- SonicWall Pro Firewall/Routers w/ ADSL & ISDN & Full T1 services from SBCS for our VPN over IP (WAN)
- Using Microsoft Exchange Server 2000 for E-mail System
- 3Com U.S. Robotics 56k Courier Modem, Used for faxing from workstations and remote dial up

E-Mail Address: drash@drashce.com

Internet Address: www.drashce.com



DCE provided a Phase I ESA and Geotechnical Engineering services for this Outback Steak House In San Antonio, TX

Financial Information

Banking

Drash Consulting Engineers, Inc. (DCE) has been banking with Broadway National Bank since 1994. You can contact our banker at:

Broadway National Bank
P.O. Box 17001
San Antonio, Texas 78217
B.G. Horner, Senior Vice President
(210) 283-6500

Insurance

Our firm maintains complete insurance coverages for commercial and professional liability. The firm's commercial liability coverages are provided by Hartford Insurance Company. Professional liability coverage is provided by Design Professionals Insurance Company (DPIC). A general breakdown of our coverages is as follows:

General Liability	\$2,000,000
Automobile Liability	\$1,000,000
Worker's Compensation	\$1,000,000
Umbrella Liability	\$4,000,000
Professional Liability	\$2,000,000

Commercial Liability

Ms. Sue Lebsack
Marsh & McLennan
800 Market Street, Suite 2600
St. Louis, MO. 63101-2500
(800) 648-7631

Professional Liability

Mr. Jim Jimmerson
USI Insurance Services of Texas
1946 S IH 35, Suite 301
Austin, Texas 78704
(512) 443-9669



Geotechnical





River Mountain Bridge Boerne, TX



DCE Technician Performing Permeability Test in Geotechnical Laboratory

Geotechnical engineering is one of the most specialized engineering disciplines in today's world of complex and changing technologies. Relying on a knowledge of civil engineering, geology, hydrology, and the mechanics of soil and rock, geotechnical engineers include the integration of theory, state-of-the-art practices, and economic trade-offs in developing sound and feasible solutions to subsurface conditions and problems. This enables geotechnical engineers to predict the enduring compatibility of man-made structures with in-situ soils/rock and compacted fills.

Drash Consulting Engineers, Inc. (DCE) provides a full range of consulting geotechnical engineering services. The process begins with a review of the geologic and hydrologic setting of the site using published geology maps and aerial photography, when available. The process continues with a properly planned field exploration program to obtain suitable subsurface samples for laboratory testing and analysis. Geotechnical engineers then evaluate the laboratory test data and physical characteristics of the subsurface samples. Engineering solutions and feasible recommendations are then formulated which are included in an engineering report.

Supported by our computer technology and comprehensive library of geotechnical books, literature and software, our geotechnical engineers are directly responsible for implementing and directing field exploration programs, laboratory testing and analysis, engineering analysis, and final report conclusions and recommendations. Our solutions and recommendations are tempered with our knowledge of the area geology and subsurface conditions along with engineering judgment to meet the client and project needs. Regardless of the size and type of project or working conditions, DCE delivers prompt and comprehensive results. Geotechnical engineering covers a broad area relating to the earth sciences. Services generally include field exploration, laboratory testing, and engineering design.

Field Exploration

The basic ingredients of any geotechnical engineering project are careful planning and understanding of the site and subsurface conditions to ensure success of the planned development. We interact with clients and develop our field exploration program to use appropriate methods and means of evaluating the site and subsurface conditions. These methods may include subsurface drilling and sampling of soils and rock in accordance with the American Society for Testing and Materials (ASTM) standards, literature, and aerial photography review, in-situ testing including pressuremeters, and geophysical testing.



DCE Technicians drilling to recover soil samples for laboratory testing



Cellular Tower, McAllen, TX

Our geotechnical field activities are performed under the direction of graduate and licensed professional engineers. Field engineering technicians are certified through a program provided by the National Institute for the Certification of Engineering Technologies (NICET). Our drilling and sampling activities are conducted by independent contract drilling companies.

DCE's trained and experienced engineering technicians and geologists are present during the field exploration activities to direct the contract driller's activities, immediately secure the recovered subsurface samples, perform appropriate field tests, observe and record the presence of groundwater, and log the appropriate field data and information.

Laboratory Testing

Equally important to the overall geotechnical study is the geotechnical laboratory testing program. DCE has a fully equipped laboratory to test soil and rock specimens for the following:

- Classification
- Physical and Index Properties
- Consolidation
- Permeability
- Unit Density
- Strength
- Soil Suction
- Swell
- Dispersion
- Water Content
- Resistivity

Laboratory tests are accomplished with our own equipment and by our trained engineering technicians under the direction of graduate and licensed professional engineers. Our laboratory technicians are certified through programs developed by the National Institute for the Certification of Engineering Technologies (NICET). DCE complies with established national and industry standards and maintains an in-house quality assurance program to make certain that the firm provides quality services and accurate testing. Equipment that is used for testing is calibrated annually by independent certifying agencies.

DCE is regularly inspected by the National Institute of Standards and Technology through the AMRL (AASHTO Materials Reference Laboratory) accreditation program. The U.S. Army Corps of Engineers periodically visits our laboratory to inspect our testing equipment and review our testing procedures.



Los Tomates Border Station
Brownsville, TX



DCE Technician Performing Triaxial Test

Engineering Design

In order for our geotechnical engineers to provide technically sound, innovative, and practical solutions and recommendations, good field and laboratory test data of the site and subsurface conditions are essential. The geotechnical engineer must then carefully evaluate the field and laboratory data by performing an engineering analysis, using this data and the available site layout and preliminary design information, tempered with prudent engineering judgment and realization of construction costs, to meet both the project and client needs.

DCE's geotechnical engineering services include the following:

- Subsurface explorations
- Foundation engineering
- Earthen structures
- Feasibility studies
- Blast monitoring assessments
- Field observation and testing
- Subsurface groundwater modeling
- Soil Improvement
- Retention systems
- Pavement design
- Geologic studies
- Geologic assessments
- Forensic studies
- Third party review
- Expert witness testimony
- Instrumentation

Presented on the following pages is a partial list of representative geotechnical engineering projects that we have completed.

Representative Geotechnical Engineering Projects

Project	Client
Cellular Towers 300+ Sites in Texas and Oklahoma	Sprint PCS Dallas, Texas Contact: Chris Prescott / (214) 525-4065
Luby's Cafeteria San Antonio, Orange, Beaumont, Houston, Dallas, and Weslaco, Texas	Luby's Cafeterias, Inc. San Antonio, Texas Contact: John Finch / (210) 654-9000
Camp Bullis Road Bridge Bexar County, Texas	Bexar County Department of Public Works San Antonio, Texas Contact: James Brannan / (210) 270-6700
Water Storage Tanks Kendall County, Texas	Kendall County Water Control & Improvement Dist. No. 1 c/o Harvey Engineering Boerne, Texas Contact: Charles Harvey
HEB Produce Warehouse Rittiman and Fratt Roads. San Antonio, Texas	H.E. Butt Grocery Company San Antonio, Texas Contact: Mary Rohrer / (210) 246-8672
Nelson W. Wolfe Stadium (San Antonio Missions) San Antonio, Texas	City of San Antonio Parks & Recreation San Antonio, Texas Contact: Jim Mery / (210) 299-8480
138 kV / 345 kV Rio Hondo Switching Station Cameron County, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Pete Zepeda / (918) 594-4174
DEA Facility El Paso, Texas	Lloyd Walker Jary & Associates, Inc. San Antonio, Texas Contact: Lloyd W. Jary / (210) 496-2022
345 kV Transmission Line Lon C. Hill Generating Station to Coletto Creek Generating Station Nueces, San Patricio, Bee, and Goliad Counties, Texas	Black & Veatch Kansas City, Missouri Contact: Otto J. Lynch / (913) 339-2000
HEB Stores San Antonio, Austin, Rio Grande Valley and Corpus Christi, Texas	H.E. Butt Grocery Company San Antonio, Texas Contact: Mary Rohrer / (210) 246-8672

*now owned by American Electric Power

Representative Geotechnical Engineering Projects

Project	Client
138 kV Loyola Substation Kleberg, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Artis Karnei / (918) 594-4195
Colonade Apartments San Antonio, Texas	Gables Residential Trust Houston, Texas Contact: Rick Craig / (713) 784-4144
Pan American Logistic Center San Antonio, Texas	Pan American Logistic Center, Inc. San Antonio, Texas Contact: Wayne Harwell / (210) 829-7272
Dickinson Street Improvements San Antonio, Texas	S.M. Galindo Engineers San Antonio, Texas Contact: Sam M. Galindo / (210) 349-4695
Rosemont Apartments San Antonio, Texas	Prodesco, Inc. San Antonio, Texas Contact: Ken Nichol / (210) 829-1786
Generator Foundation Analysis Kwajalen, Marshall Islands	Simpson Group San Antonio, Texas Contact: Michael Coyle / (210) 828-2217
345 kV Transmission Line Falfurrias, Substation - Laredo Plant Webb, Jim Hogg, and Brooks Counties, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin Polasek / (918) 594-4197
Mines Road Sanitary Sewer Line City of Laredo Laredo, Texas	City of Laredo Laredo, Texas Contact: Rogelio Rivera / (210) 791-7346
Bates 138 kV/230 kV Converter Station Hidalgo County, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin Polasek / (918) 594-4197
Forest Hills Presbyterian Church Geological Assessment San Antonio, Texas	Ed Nicholson Associates, Inc, Architects San Antonio, Texas Contact: Ed Nicholson / (210) 824-3706
Crockett Street Bridge (Span Between St. Mary's & Navarro) San Antonio, Texas	Project Control of Texas San Antonio, Texas Contact: Dick McNary / (210) 308-5800

*now owned by American Electric Power

Representative Geotechnical Engineering Projects

Project	Client
Freezer/Cooler Processing Plant San Antonio, Texas	Seacliff Seafoods Wilmington, California Contact: Bob Joseph / (210) 342-8022
Arion Business Park Office Warehouse San Antonio, Texas	Cavender & Hill Properties / Pritchard & Associates San Antonio, Texas Contact: James Pritchard / (214) 357-0011 Contact: Mark Cavender / (210) 349-0900
138 kV Double Circuit Transmission Line Teneska North Loop	Brazos Electric Power Cooperative Waco, Texas Contact: Byron Chandler / (817) 750-6500
Apron Evaluation Laughlin, AFB	Simpson Group San Antonio, Texas Contact: David Cassanova / (210) 340-2216
University of Texas at San Antonio Downtown Campus Building San Antonio, Texas	University of Texas, Office of Facilities, Planning & Construction Austin, Texas Contact: George Abikhaled / (512) 499-4600
Walgreen Stores Dallas, San Antonio, and Corpus Christi, Texas	Bencor Development, Inc. Albuquerque, New Mexico Contact: James Durst / (505) 881-1655
138 kV Transmission Line Franklin's Camp /Seaway (9 miles geotechnical design)	South Texas Electric Cooperative Nursery, Texas Contact: Ben Carter / (512) 575-6491
Cellular Towers 100+ sites throughout Texas	Southwestern Bell Mobile Systems San Antonio, Texas Contact: Frank Mohlman/(210) 225-0167
Classroom Addition Meyer Elementary School Hondo, Texas	Hondo Independent School District Hondo, Texas Contact: Newell Woolls / (210) 426-3027
Silent Sunrise Middle School Knoll Creek Elementary School San Antonio, Texas	Northside Independent School District San Antonio, Texas Contact: Jim Martin / (210) 257-1200

Representative Geotechnical Engineering Projects

Project	Client
Huebner Elementary School San Antonio, Texas	North East Independent School District San Antonio, Texas Contact: Fred Calhoun / (210) 804-7012
Multi-purpose Building and Running Track Three Rivers, Texas	Three Rivers Independent School District Three Rivers, Texas Contact: David Yeager / (512) 786-3626
Nabisco Bakery Pole Foundations Houston, Texas	D.B. Industries Red Wing, Minnesota Contact: Lenore Mercer / (612) 388-8282
Manufacturing Facility Harris Corporation San Antonio, Texas	Harris Corporation, Farinon Division San Antonio, Texas Contact: David Chipman
Terminal Building Maverick County Airport Maverick County, Texas	Charles Willis & Associates Arlington, Texas Contact: Charles Willis / (817) 261-1863
New Grocery Stores Eagle Pass, Texas Sinton, Texas Brenham, Texas San Antonio, Texas	H.E. Butt Grocery Company San Antonio, Texas Contact: Mark Johnson / (210) 246-8715
Fire Station No. 20 Day Care Facility San Antonio, Texas	Alamo Architects San Antonio, Texas Contact: Michael Lanford / (210) 227-2612
Los Fresnos Elementary Schools Los Fresnos, Texas	Gomez Garza Design, Inc. Brownsville, Texas Contact: David Saenz / (210) 546-0110
Office/Warehouse Facility Harlingen, Texas	ProLogis Trust Aurora, Colorado Contact: Pam Porter / (303) 576-2611



Construction Materials





The LBJ Student Center and Parking Garage in San Marcos, TX. DCE provided construction materials engineering and testing services .



The new U.S. Federal Courthouse and Office Building in Brownsville, TX. DCE provided construction materials engineering and testing services .

Due to the rapid technological expansion of construction materials and methods and refinements in structural design, quality assurance during construction has become increasingly important. Successful projects depend on the quality of construction materials supplied and their use during all phases of construction. Drash Consulting Engineers, Inc. (DCE) is poised to be that vital quality assurance/quality control link between owners, design professionals, and contractors on projects. Our construction materials engineering services involve three major areas: Construction Materials Engineering, Construction Materials Testing, and Construction Observation and Testing.

Construction Materials Engineering

To assist in reducing the potential for problems that may arise during construction, DCE's materials engineers can work with owners, design professionals, and contractors to provide technical expertise during preparation of project specifications and for analysis of the engineering and physical properties of construction materials and manufactured products. DCE's construction materials engineers can also assist in failure investigations of damaged structural elements, materials, or products. Our materials engineers can employ both destructive and nondestructive testing programs during their studies or investigations.

DCE's materials engineering group has the expertise, and can assist the client and other design professionals, with:

- Evaluation of materials, products, or structural elements
- through destructive and nondestructive methods;
- Design and performance of full scale load tests
- Evaluation of construction techniques involving construction materials;
- Design, implementation, and evaluation of instrumentation programs;
- Assessment or evaluation of foundation and structure distress;
- Building surveys to establish as-built construction details;
- Expert witness testimony; and
- Third party review.

Construction Materials Testing

The physical and engineering properties of natural materials, man made mixtures and products can be tested in our laboratory. DCE's laboratory is fully equipped for testing of most soils, aggregates, cement, mortar, grout, concrete, brick, and asphalt. Typical tests that can be performed are:



Drilling pier holes for foundations.



DCE provided construction materials engineering and testing services for the new Palo Alto College Learning Center and Student Center in San Antonio, TX.

- Concrete mix designs;
- Mortar mix designs;
- Asphalt mix designs;
- Soil-additive (cement, fly ash, lime) mix designs;
- Mechanical sieve analysis;
- Absorption and specific gravity of aggregates;
- Compressive strength testing of concrete cores obtained from hardened concrete and field molded cylinders;
- Moisture-density relationship for soils, base materials, and soil-additive mixtures;
- Gradation, specific gravity, extraction, and stability of asphalt.

Laboratory tests on these materials are performed with our own equipment and by our trained engineering technicians under the direction of graduate or licensed professional engineers. Our technicians are certified through programs developed by the National Institute for the Certification of Engineering Technologies (NICET) and American Concrete Institute (ACI).

DCE complies with established national and industry standards and maintains an in-house quality assurance program to make certain that the firm provides quality services and accurate testing. Our laboratory meets the requirements of the American Society for Testing and Materials (ASTM) E 329 Standard. Test equipment is calibrated by independent certifying agencies. DCE is regularly inspected by the National Institute of Standards and Technology through the AMRL (AASHTO Materials Reference Laboratory) and CCRL (Cement and Concrete Reference Laboratory) accreditation programs. The U.S. Army Corps of Engineers periodically visits our laboratory to inspect our testing equipment and review our testing procedures.

Construction Observation and Testing

DCE provides a full range of field observation and testing services relating to soils, concrete, asphalt, steel and foundations during construction of a project. Our objective is to assist the owner, design professionals, and contractors in reducing the potential for problems that may arise with materials, products, or procedures during construction.

The field observation and testing services are accomplished with our own equipment and by our ACI and NICET certified and experienced engineering technicians. All field services are performed under the direction of graduate and licensed professional engineers. As required, or when the project size warrants, our engineers perform field observation and testing services. Equipment is maintained regularly and calibrated annually by independent certifying agencies.

We cross-train our technicians in all our service areas. This cross-training, along with their certifications, assure you and us that qualified personnel are being used on a project.

Construction Materials Engineering Services that DCE provides include:



Workers are setting panels at an addition to Budweiser's plant facility in San Antonio.



A DCE Technician collects concrete samples from SA Airport taxiway job for laboratory testing of cylinders and beams.

- Sampling of soils and aggregates for laboratory analysis of physical and engineering properties;
- Sampling of materials for use in asphalt mix designs, concrete mix designs, and soil-additive designs (fly ash, cement, lime);
- Asphalt and concrete batch plant inspections;
- Coring of in-place compacted asphalt or hardened concrete to evaluate their basic ingredients, properties, and overall integrity;
- In-place density tests during earthwork activities to measure compaction of subgrades, fill zones, and backfill along walls and trenches;
- Sampling of fresh concrete during concrete pours to measure its temperature, slump, air content, and unit weight and mold standard size cylinders for laboratory compressive strength tests;
- Observing installation techniques during construction of foundations such as piers, piles, footings, mats, and slabs;
- Observing and reporting of reinforcing steel being placed in concrete members (foundations, slabs, columns, walls) for the correct size and at the proper location/spacing;
- Performing tightness and torque testing for bolted connections;
- Performing full-scale load testing programs;
- Installing instrumentation and data collection of instrumented members;
- Observing installation techniques to assure that the roofing materials are as specified and that the application of those materials meets the requirements of the project specifications and manufacturer; and
- Observing the batching and placement operations for both precast and concrete fabrication to document the use of approved materials, techniques, and procedures.

Presented on the following pages are representative projects of our construction materials engineering services.

Representative Construction Materials Engineering Projects

Project	Client
Nelson W. Wolff Stadium San Antonio, Texas	City of San Antonio Parks & Recreation San Antonio, Texas Contact: Jim Mery / (210) 299-8480
Homestead Village San Antonio, Texas	Property Trust of America Santa Fe, New Mexico Contact: Mark Neumann / (505) 982-2925
Luby's Cafeteria San Antonio, Texas	Guido Brothers Construction San Antonio, Texas Contact: Bill Norton / (210) 344-8321
Pan American Logistic Center San Antonio, Texas	Pan American Logistic Center, Inc. San Antonio, Texas Contact: Wayne Harwell / (210) 829-7272
W.W. Grainger Store San Antonio, Texas	Hooker Contracting Company, Inc. San Antonio, Texas Contact: Scott Shaheen / (210) 492-9411
Walgreen Drug Store San Antonio, Texas	R.L. Wade Construction Company San Antonio, Texas Contact: Michael Lackey / (210) 490-9000
Residence & Fairfield Inns San Antonio, Texas	K.P. Meiring Construction Indianapolis, Indiana Contact: Jim Meiring / (317) 257-7506
HEB Grocery Stores Pleasanton, New Braunfels, & San Antonio, Texas	HEB Construction Company San Antonio, Texas Contact: Allen Whitley / (210) 921-7900
U.S. Postal Facility Perrin-Beitel San Antonio, Texas	Lyda Construction San Antonio, Texas Contact: Dee Lyda / (210) 684-1770
SAISD Schools Bonham Elementary School Fenwick Elementary School San Antonio, Texas	San Antonio ISD San Antonio, Texas Contact: Lanny Worel / (210) 299-2673

Representative Construction Materials Engineering Projects

Project	Client
San Marcos Bank San Marcos, Texas	T.P. Gilmore, Inc. San Marcos, Texas Contact: Mike Gilmore / (512) 396-8023
Rosemont Apartment San Antonio, Texas	Prodesco, Inc. San Antonio, Texas Contact: Ken Nichol / (210) 829-1786
Amerisuites Hotels San Antonio, Texas	Tri Mark Construction Las Colinas, Texas Contact: Ron Smith / (214) 714-0095
Sumner Suites San Antonio, Texas	Moore & Associates, Inc. Gallatin, Tennessee Contact: Jim Jackson / (615)230-6866
Presidio Plaza Planet Hollywood San Antonio, Texas	Maloney Development Partnership, Ltd. San Antonio, Texas Contact: Steve Lubbering / (210) 226-8888
Walgreen Stores Kerrville, Texas and San Antonio, Texas	Bencor Development Company Albuquerque, New Mexico Contact: James Durst / (505) 881-1655
San Antonio International Airport Reconstruction of Taxiway	Department of Aviation San Antonio, Texas Contact: Art Villarreal / (210) 821-3524
LBJ Student Center & Bookstore San Marcos, Texas	Southwest Texas State University San Marcos, Texas Contact: Paul Cornell / (512) 245-2202
La Plaza Del Norte San Antonio, Texas	Lazarus Property Corporation Dallas, Texas Contact: Bill Peavy / (214) 691-8881
Perrin Creek Business Park Perrin Creek San Antonio, Texas	Security Capital Industrial Trust Dallas, Texas Contact: John Clinton / (214) 770-2292
Guadalupe Valley Hospital Transitions Care Unit Seguin, Texas	Guadalupe Valley Hospital Seguin, Texas Contact: Ken Mueller / (210) 379-2411
University of Texas Downtown Campus San Antonio, Texas	The University of Texas System Austin, Texas Contact: Stan Scott / (512) 499-4696



Environmental



Environmental Services



DCE environmental technician in full containment protective wear monitoring possible contaminated environment.

Our environmental engineering and consulting services are designed to answer the difficult questions concerning environmental issues. We are uniquely qualified to perform a range of environmental consulting services with our experienced professional staff to service the Texas region. For each project, we balance the project scope and project recommendations with our client's best interest in mind. These services may be precipitated by federal, state, or local regulatory agencies, or by the client's concern of limited or potential future liabilities. We see our role not as just an environmental consultant, but as our client's business partner. As a partner, we take a realistic approach emphasizing strategic environmental management of our client's activities with a sensitivity toward the bottom line.

We can enhance and supplement our capabilities through our association with other firms that we have regularly worked with on numerous projects. Depending on your needs, the scope of work required, and the project schedule, DCE can serve as the lead professional or as a subconsultant. Soil and water specimens requiring analysis for toxicity and hazardous substances are subcontracted to analytical laboratories that are fully certified in accordance with SW-846. Drilling and sampling is subcontracted to qualified drilling companies that have successfully met and continue to meet OSHA health and safety requirements. Our trained and experienced engineers and scientists supervise the subcontracted services.

Our knowledge of regulations and dealing with agencies are a major element of any environmental project. Our environmental staff has a working relationship with the environmental Protection Agency (EPA), Texas Department of Health (TDH) and the Texas Commission on Environmental Quality (TCEQ). We believe in good communication with these and other agencies on all our projects so that you achieve a practical and cost effective solution to your environmental problem. Success or failure of a project can hinge on this relationship.

DCE performs Indoor Air Quality Investigations in accordance with guidelines published by various agencies that include the Environmental Protection Agency (EPA), Occupational Safety and Health Act (OSHA), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control (CDC), Texas Department of Health (TDH), and New York City guidelines. DCE's environmental field staff meets 40 CFR 1910.120 OSHA medical monitoring, health and safety requirements.

DCE has performed numerous Indoor Air Quality Investigations with the purpose of identifying not only elevated levels of contaminants capable of causing adverse health effects in occupants, but also to identify potential environmental conditions in the structure capable of allowing for contaminate production and transport. Air sampling is performed in accordance with published protocols and samples are submitted to qualified laboratories for analysis. Recommendations for correcting conditions and circumstances unique to a particular project that are identified as allowing for occupant exposure to contaminants are compiled into a final report.

DCE provides environmental services for a diverse group of clientele which include financial institutions, school districts, manufacturers, retailers, developers, real estate brokers, government, insurance companies, private sector, and individuals. We have performed numerous environmental site assessments on everything from vacant tracts to large industrial developments.

DCE offers a full range of site investigative services from sampling events following Phase I Environmental Site Assessments to complex, multi-media site investigations and remediation.



DCE environmental scientist gathering data during Phase I ESA activities.

Services that we provide include:

- Phase I - Environmental Site Assessment;
- Phase II - Environmental Site Investigation;
- Phase III - Environmental Site Remediation;
- Design and installation of monitor wells;
- Subsurface soil and water sampling and monitoring plans;
- Field observations and testing during investigations and remedial construction quality assurance;
- Underground storage tank assessment and remediation;
- Design and permitting of municipal and industrial solid waste and lagoon facilities;
- Design and installation of monitor wells;
- Subsurface soil and water sampling and monitoring plans;
- Field observations and testing during investigations and remedial construction quality assurance;
- Underground storage tank assessment and remediation;
- Design and permitting of municipal and industrial solid waste and lagoon facilities;
- Construction Quality Assurance and Quality Control for municipal and industrial disposal facilities;
- Closure permits of existing landfills and lagoons (ponds);
- Design of slurry wall and similar containment structures;
- Erosion Control designs and implementation;
- Geosynthetic Liners and Geotextile wall designs and implementation;
- Comprehensive Facility Integrated Pollution Prevention Plans;
- Spill Prevention Control and Countermeasures (SPCC) Plans;
- National Pollutant Discharge Elimination Systems (NPDES);
- Storm Water Pollutant Discharge Plans (SWPP);



Photo shows DCE personnel conducting environmental soil and water sampling at a contaminated site.



Left: Air Sampling
Right: Visible mold proliferation
beneath vinyl wallpaper

- Asbestos and Lead Based Paint Consulting;
- Geologic Site Assessments;
- Texas Voluntary Cleanup Program (VCP);
- Risk-Based Corrective Actions (RBCA);
- Indoor Air Quality Assessment;
- Innocent Owner/Operator Program (IOP);
- Indoor Mold Assessments ;
- Construction oversight during remediation;
- Air monitoring during abatements.

DCE is licensed by the State of Texas as a Leaking Petroleum Storage Tank (LPST) Corrective Action Specialist. (License N° RCAS 00806)

The firm also has the following equipment:

- Photovac Microtip Photo-ionization Detector Organic Vapor Monitor
- Thermo 580B Photo-ionization Detector Organic Vapor Monitor
- Gas Tech Land Surveyor Model 201 with Explosimeter, Methane Detector, Oxygen Sensor (O_2), and Hydrogen Sulfide Meter (H_2S)
- Heron Model 4746 Interface Probe for Aqueous and Organic Liquids
- Resistivity Meter (2) for conducting the Wenner Four-Electrode Method by ASTM G57-95a
- 2-Gast rotary vane vacuum pump with a self-contained flow meter
- 2-Impact Sampler air-sampling device
- WallChek_{TM} Wall cavity sampler
- Moisture meter
- 7-Gast rotary vane vacuum pumps (for air monitoring)
- Nikon Model YS2 binocular microscope (PCM analysis)

Representative Environmental Projects

Project:	Wurzbach Parkway
DCE Client:	Civil Engineering Consultants (CEC)
Services Provided:	Phase II Environmental Site Assessment
Description of Services:	Conducted Phase I ESA for several miles of TxDOT right of way and provided asbestos survey for buildings to be demolished in the right of way. Landfills were a concern in this section of the right of way.
Project:	High Voltage Electric Transmission Line
DCE Client:	American Electric Power
Services Provided:	Geotechnical and Phase II ESA, and Construction Monitoring and Oversight
Description of Services:	Provided geotechnical and environmental assessment in area of Corpus Christi that contains numerous refineries and petrochemical plants. Drilling assessments required frequent use of respirators and supplied air. Subsequently provided plans for containment of contaminated soil and groundwater once removed from the ground during construction. Also provided air monitoring using field devices such as Organic Vapor Meter (OVM) as well as SUMMA canisters.
Project:	Lackland AFB, Texas Title II Services
DCE Client:	Tetra Tech/ASL
Services Provided:	Asbestos Abatement Monitoring
Description of Services:	DCE provided monitoring of asbestos from base housing as part of the privatization of housing at Lackland AFB. We observed asbestos remediation for a period of three months. Project involved Lackland AFV, US Army Corps of Engineers, Engineering firms, and subcontract asbestos and demolition firms. We successfully completed this high-profile project.
Project:	Proposed VA Hospital Parking Lot
DCE Client:	Daniel T. Muzquiz and Associates
Services Provided:	Phase I, Wetland Delineation, SHPO/USF&WS Submittals
Description of Services:	DCE worked with the Corps of Engineers and the VA to complete Section 404 permit for modification of a wetland at the VA Hospital. Includes five years of monitoring to ensure that mitigation requirements are met.

Representative Environmental Projects

Project:	Kelly AFB, Texas
DCE Client:	David and David Construction
Services Provided:	TRRP Affected Property Assessment Report (APAR)
Description of Services:	Texas Risk Reduction (TRRP) closure using the Affected Property Assessment Report (APAR) Form. This was a project to assess high levels of TPH from a ghost UST that was abandoned in the 1920s. We consulted with Mr. Chet Clark (originator of the form) with the TCEQ regarding completion of the form and how to address high TPH concentrations. Project was successfully completed.
Project:	Proposed Cellular Tower Site in Austin
DCE Client:	Sprint PCS
Services Provided:	Partial Area Response under VCP
Description of Services:	Completed TRRP APAR form for cellular tower property that had been impacted by an off-site source. Unusual partial-area response for remediation of an area that was not the source of the contamination. This was a Voluntary Cleanup Program Project completed under TRRP rules.
Project:	Cedar Creek & Thrift Property
DCE Client:	San Antonio River Authority
Services Provided:	Phase I Environmental Site Assessment
Description of Services:	Phase I ESA for part of the Parklands Acquisition over the Recharge and Contributing Zones of the Edwards Aquifer. DCE assessed historical structures, wetlands, endangered species, sole-source aquifer, and environmental concerns for properties totaling over 800 acres in size.

Other Representative Environmental Projects

Project	Client
Phase I ESA 43 Acre Tract for Electrical Substation Hidalgo, County, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
Phase I ESA Cellular Tower Site San Antonio, Texas	Southwestern Bell Mobile Systems, Inc. Dallas, Texas Contact: Lowell Jones / (214) 733-2032
Indoor Mold Assessment Broadway National Bank Cheever Building San Antonio, Texas	Broadway National Bank San Antonio, Texas Contact: Jeff Foote / 210-283-6680
Asbestos Survey Hollywood Video New Braunfels, Texas	R.L. Wade Construction Company San Antonio, Texas Contact: Michael Lackey / (210) 490-9000
Environmental Soil Sampling Sewer Replacement Project San Antonio, Texas	San Antonio Water Systems San Antonio, Texas Contact: Cindy Kovacic / (210) 704-7297
Phase I ESA Luby's Cafeterias Houston, Texas	Luby's Cafeterias, Inc. San Antonio, Texas Contact: John A. Finch / (210) 654-9000
Phase I ESA and Phase II Investigation Albertson's Harlingen, Texas	Albertson's, Inc. San Antonio, Texas Contact: Mark Lavin / (210) 402-7271
Environmental Monitoring Old Alamo Cement Quarry San Antonio, Texas	Alamo Cement Company, Ltd. San Antonio, Texas Contact: Arthur Quinones / (210) 208-1880
Environmental Consulting Ashby Area Construction Project San Antonio, Texas	San Antonio River Authority San Antonio, Texas Contact: Terry Conn / (210) 227-1373
Phase I ESA Fire Station 20 San Antonio, Texas	City of San Antonio c/o Alamo Architects San Antonio, Texas Contact: Jim Poteet / (210) 227-2612
Indoor Mold Assessment Commons Street Buildings New Braunfels, Texas	Wunderlich Builders, Inc. Seguin, Texas Contact: Bob Wunderlich / 830-303-6210
Indoor Mold Assessment Texas Migrant Council- Donna Building Donna, Texas	Texas Migrant Council Donna, Texas Contact: Juan Cortez / 956-464-5000

Other Representative Environmental Projects

Project	Client
<p style="text-align: center;">Phase I ESA 24-Acre Site San Antonio, Texas</p>	<p>Texas Commerce Bank Houston, Texas Contact: Debra K. Patterson / (713) 216-5150</p>
<p style="text-align: center;">Phase I ESA 25-Acre Site San Antonio, Texas</p>	<p>Northside Independent School District San Antonio, Texas Contact: Jim Martin / (210) 257-1200</p>
<p style="text-align: center;">Lead Based Paint Consulting Services Pearsall Housing Authority Three Rivers Housing Authority</p>	<p>Ms. Sue Olson, Project Coordinator San Antonio, Texas (210) 657-3097</p>
<p style="text-align: center;">Asbestos and Indoor Air Quality Consulting Services Valley Regional Medical Center Brownsville, Texas</p>	<p>Kenny Sewell, Director of Engineering Valley Regional Medical Center Brownsville, Texas (210) 831-9611</p>
<p style="text-align: center;">Asbestos Consulting Services Serna Elementary School San Antonio, Texas</p>	<p>North East Independent School District San Antonio, Texas Contact: Joe Cidras / (210) 804-7270</p>
<p style="text-align: center;">Asbestos and Lead Based Paint Consulting Services Central and South Texas</p>	<p>RW Environmental Services, Inc. San Antonio, Texas Contact: Robert Whiting / (210) 375-2252</p>
<p style="text-align: center;">Asbestos and Lead Based Paint Consulting Services Lackland Air Force Base San Antonio, Texas</p>	<p>Lackland AFB, Texas Contact: Jerry Bolton / (210) 226-3923</p>
<p style="text-align: center;">Indoor Mold Assessment Laredo Detention Facility Laredo, Texas</p>	<p>Corrections Corporation of America Nashville, Tennessee Contact: Ken Avant / 615-263-3000</p>
<p style="text-align: center;">Lead Based Paint Consulting Services Naval Air Station, Bldg. 36 Corpus Christi, Texas</p>	<p>KW Construction San Marcos, Texas Contact: Jim Kelly / (512) 353-5900</p>
<p style="text-align: center;">Indoor Mold Assessment Broadway National Bank – Culebra Branch San Antonio, Texas</p>	<p>Broadway National Bank San Antonio, Texas Contact: Jeff Foote / (210) 283-6680</p>
<p style="text-align: center;">Indoor Mold Assessment Broadway National Bank Boerne, Texas</p>	<p>Broadway National Bank San Antonio, Texas Contact: Bryan D'Spain / (210) 283-6595</p>
<p style="text-align: center;">Indoor Mold Assessment Intco Suite 210 San Antonio, Texas</p>	<p>Intco Development of Texas, Inc. San Antonio, Texas Contact: Lynn Hillin / 210-692-9063</p>



Transmission & Distribution





Completed Transmission Line

Transmission & Distribution Services

The Transmission and Distribution (T&D) Division of Drash Consulting Engineers, Inc. (DCE) offers a full-range of transmission and distribution line design services for private, public, and municipal utility companies. Our services cover all aspects of the project from the planning stage through construction, or we can assist your in-house staff with our services and capabilities. Services that DCE provides in the transmission-distribution field include the following:

- Transmission Line Design
- Distribution Line Design
- Phase I and II Environmental Assessments
- Geotechnical Engineering
- Structure Foundation Design
- Construction Management
- Construction Coordination and Inspection

We can enhance and supplement our capabilities through our association with other firms that we have regularly worked with on numerous projects. As your lead design professional, we offer the above services in addition to subcontracting services such as environmental impact studies, right-of-way acquisition, condemnations, aerial photography surveying and mapping.

Our engineers and technical staff have worked on transmission line projects with voltages up to 345kV and distribution line projects with voltages up to 35 kV. Projects have included new line design and construction; reconstruction of existing lines; replacing/upgrading conductors, insulators, and other hardware on existing structures; relocating structures; rerouting of circuits; and geotechnical-foundation engineering design. Structures have included wood and steel single poles, wood and steel H-frames, and steel lattice frames. Foundations have consisted of direct embedded poles with both soil and concrete backfill, driven piles, and cast-in-place drilled piers with steel reinforcement using both stub angles and anchor bolt cages.

Transmission and distribution line projects can vary significantly in scope and approach. The following sections provide a general outline of the services and related activities that can be provided by DCE for transmission and distribution projects. We recognize that distribution line design, although somewhat similar in approach to transmission line design services, generally does not require all the elements outlined below for higher voltage design. As your consultant, we can perform all the indicated tasks or only the ones required by your firm.

Planning Phase

At this early stage of the project, we can assist your staff with some of its planning activities. These activities may include assistance in route selection, interface with right-of-way acquisition and environmental engineering efforts, attend and prepare presentations for regulatory agencies and public hearings, and provide expert witness testimony.



Transmission Line Inspection

Pre-Design Phase

Careful planning and a good understanding of the project is essential to providing technically sound solutions and recommendations. In the conceptual design stage, alternate line routes, structure types, and line configurations can be evaluated with their associated cost and impacts. Activities typically include:

- Visits to the site/route to get familiar with the terrain and general surroundings;
- Evaluation of subsurface conditions along the route using available data from our geotechnical files and area knowledge, or by drilling a very limited number of test borings along the route;
- Evaluation of structure types based on environmental conditions, topography, conductor and insulator configurations, safety codes, and constructibility;
- Evaluation of foundation types based on subsurface conditions, structure types, and constructibility;
- Evaluation of conductor and shield wire types, sizes, and configurations;
- Evaluation of insulator types, configurations, strengths and maintenance, in addition to selecting support hardware for compatibility;
- Preparation of a preliminary design report, cost estimates and project schedule.

Engineering and Design Phase

The scope of work may vary significantly depending on the project type and requirements. Project requirements may involve one structure or hundreds of structures, which can be new structures, existing structures, or a combination of both. In any case, each project may involve some or all of the following activities:

- Visiting the route to get familiar with topography, area surroundings, and existing line conditions if applicable;
- Preparation of a design and construction schedule using software for tracking progress of the projects;
- Conducting a geotechnical engineering study (drill test borings along the route, test subsurface samples for evaluation of design soil/rock parameters) to provide appropriate foundation recommendations;
- Assisting in route selection and right-of-way acquisition;
- Assisting or coordinating surveys (ground and aerial);
- Assisting or coordinating plan and profile drawings;
- Locating structures on plan or profile drawings along the planned route centerline;
- Structure drawings and conductor sag curves on plan and profile sheets;
- Preparing drawings illustrating structure configuration and load tree diagrams;
- Selecting and designing foundations for the structures using previously acquired geotechnical engineering data;
- Preparing of specifications for shop detailing and fabrication of structures including review of manufacturer's drawings;
- Preparing material requisitions for all line materials and hardware; and
- Preparing construction drawings and specifications.



Transmission Line Under Construction

Construction Phase

After design is completed, we can assist you in prequalifying contractors for bidding, establishing a project schedule, and preparing cost estimates. We can set up and conduct prebid and preconstruction meeting(s) to review specifications, drawings, and schedules with contractors. DCE can also assist you in evaluating the bids.

When construction begins, we can provide an on-site coordinator to observe and document that all phases of work are in compliance with project plans and specifications. We can also act as your field coordinator and maintain records of materials that are delivered to the project site. At the end of the project, we can also provide you with complete record and reproducible drawings.

Presented on the following pages are representative projects of our transmission and distribution line services.

Representative Transmission & Distribution Projects

Project	Client
138 kV Transmission Line Falfurrias Substation to Laredo Plant (90 miles; new line; geotechnical, line, and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
138 kV Transmission line Asherton-Columbia-Mines (11 miles; new line; line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
35 kV Exit Structure Encino Park Substation San Antonio, Texas (New structure; structure loads; geotechnical and foundation design)	City Public Service San Antonio, Texas Contact: Spurgeon Busby / (210) 978-2339
69 kV Transmission Line Rebuild Washington-Heights Laredo, Texas (2 miles; new line; line design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Jim Sturdivant / (918) 594-4124
138 kV Transmission Line Eagle Pass-Pueblo-Conoco (5 miles; new line; geotechnical, line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
35 kV Distribution Line Chase at Babcock Rd. San Antonio, Texas (1 mile; new line; geotechnical, structural loads, and foundation design)	City Public Service San Antonio, Texas Contact: Spurgeon Busby / (210) 978-2339
138 kV Transmission Line Dilley Switching / Wormser Switching Stations (96 miles; new line; geotechnical, line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Douglas Hill / (918) 594-4122
138 kV Transmission Line Nueces Bay Crossing (Rebuild line; 13 miles; geotechnical and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Jerry Paulson / (918) 594-4198
69 kV to 138 kV Conversion of Inner Loop Laredo, Texas (Line upgrade)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Jim Sturdivant / (918) 594-4124
35 kV Exit Structure Encino Park Substation San Antonio, Texas (New structure; structure loads; geotechnical and foundation design)	City Public Service San Antonio, Texas Contact: Spurgeon Busby / (210) 978-2339

Representative Transmission & Distribution Projects

Project	Client
69/138 kV Transmission Line Rockport-Fulton Aransas County, Texas (7 miles; new line; geotechnical, line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
Relocation of 138 kV Structures Military Hwy.-Union Carbide Cameron County, Texas (Relocate 5 structures; line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Jim Sturdivant / (918) 594-4124
14.4/24.9 kV Distribution Line - Highway 90 Crossing Structure Hondo, Texas (New structure; geotechnical and foundation design)	Medina Electric Cooperative, Inc. Hondo, Texas Contact: Tony Ortiz / (210) 426-4384
69/138 kV Trans. Line Aransas Pass - Rockport Aransas County, Texas (4 miles; new line; geotechnical, line and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Marvin J. Polasek / (918) 594-4197
115 kV Transmission Line IH 76 - County Road V Morgan County, Colorado (3 miles; foundation design)	Thomas & Betts Corporation Memphis, Tennessee Contact: Curt Hinkle / (901) 682-8221
138kV Transmission Line Tenaska North Loop Johnson County, Texas (13 miles; geotechnical and foundation design)	Brazos Electric Power Cooperative, Inc. Waco, Texas Contact: Byron Chandler / (817) 750-6342
138 kV Double Circuit ARCO Chemical to Lyondell Chemical Plant Houston, Texas (3 miles; line, geotechnical, and foundation design)	Dashiell Corporation Houston, Texas Contact: Arthur Nall / (713) 479-7407
T&D Line Inspections PEC Districts	Pedernales Electric Cooperative, Inc Johnson City, Texas Contact: Jeanell Davis / (210) 868-4920
Overhead Distribution Various 12kV - 35kV Lines Bexar County, Texas	City Public Service San Antonio, Texas Contact: Richard Castrejana / (210) 978-2639

Representative Transmission & Distribution Projects

Project	Client
Underground Distribution Various Subdivisions & Apartments Bexar County, Texas	City Public Service San Antonio, Texas Contact: Stephen Mokry / (210) 978-2339
138 kV Transmission Line Rockett - Trumbull Ellis County, Texas (foundation design)	Sherman Utility Structures, Inc. Bellville, Texas Contact: Gary Byrd / (409) 865-9137
138kV Transmission Line Elk City - Sayre Oklahoma (geotechnical and foundation design)	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Phil Wright / (918) 594-4163
Sky-Gen Projects 138 kV Line Upgrading Corpus Christi, Texas	Central and South West Services, Inc.* Tulsa, Oklahoma Contact: Larry Roberson / (918) 594-4131

*now owned by American Electric Power



Key Personnel



Title:
Executive Vice President

Education:
University of Houston, B.S. in
Civil Engineering, 1976

University of Houston, M.S. in
Civil Engineering, 1978

Professional Registration:
Licensed Professional Engineer
in the State of Texas

Licensed LPST Corrective
Action Project Manager

Professional Affiliations:
American Society of Civil
Engineers (ASCE)

Associated General
Contractors (AGC)

Association of Soil and
Foundation Engineers (ASFE)

American Society for Testing
and Materials (ASTM)

Consulting Engineers Council
(CEC)

International Society of Soil
Mechanics and Foundation
Engineers (ISSMFE)

Professional Engineers in
Private Practice (PEPP)

Texas Society of Professional
Engineers (TSPE)

San Antonio Real Estate Council
(SAREC)

Society of American Military
Engineers (SAME)

Texas Council of Engineering
Laboratories (TCEL)

Brownsville Economic
Development (BED)

Chester J. Drash, Jr., P.E.

Chester Drash has 25 years of civil engineering experience specializing in geotechnical engineering, construction materials engineering and testing (CME), and environmental engineering. Mr. Drash's professional experience includes projects throughout Texas, Louisiana, and Oklahoma.

His geotechnical experience has involved varied geologic conditions, that is, he has design recommendations for projects constructed on weak and competent rock; cavernous rock formations; soft soils (barrier islands (Gulf Coast) and rivers), expansive soils; and collapsible soils. He has utilized in-situ soil testing techniques and installed geotechnical instrumentation to monitor foundations and earthen structures. Mr. Drash has geotechnically designed foundations (spread footing, piers, piles, slabs, strip footings, and mats) for buildings ranging from single to 25 stories; retaining walls and bulkheads; pavements for parking lots, roads and airfields; flood control levees; small dams; sewer and storm drainage; bridges; elevated water storage tanks; wastewater treatment plants; communications towers; oil storage tanks; industrial and manufacturing plants (including soil dynamic and settlement analysis for special equipment).

Mr. Drash has been involved in a variety of forensic projects, i. e., projects involving failures or some form of diagnostic evaluation. These projects included building foundations (both commercial and residential); retaining walls, MSE walls, and bulkheads; pavements; storage tanks; levees and embankments. He has also been involved in sites with erosion and subsurface water problems. Remedial design recommendations included foundation underpinning, French drains, cutoff walls, soil stabilizing techniques, including in-situ soil testing and installation of instrumentation. Mr. Drash's forensic services also included expert testimony (deposition and courtroom settings) on some projects, working for both plaintiff and defendant.

Mr. Drash's CME experience includes the testing monitoring and placement of various soils, backfills, concrete and asphalt during construction. During these quality control activities, Mr. Drash has supervised engineers and engineering technicians during construction of buildings; water storage tanks; wastewater treatment plants; docks and wharfs; earthen structures (levees and small dams); bridges; sewer lines and storm drainage; pavements; roads; and runways/aprons. Mr. Drash has performed field load tests on pier and pile foundations as well as beams and slabs in structures.

Mr. Drash's environmental experience covers a broad spectrum of technical services. He has been involved in Type I and Type IV municipal landfills. His activities included preparation of the geotechnical, geological aspects of landfill projects; inspections of soil and synthetic liner installation; preparation of soil and liner evaluation reports; electrical earth resistivity surveys on existing facilities; monitor well installation at new and existing landfills, including well sampling to recover liquid specimens for analytical testing. Mr. Drash's management activities have included direction and supervision of all areas of the permit application and public hearings. He has performed numerous Phase I, II environmental site assessments, UST remedial studies, containment closures, asbestos and lead base paint surveys.

Mr. Drash has been involved in the design and construction of a wide variety of electric generating facilities (plants and substations) and transmission/distribution lines. He designed foundations for various transmission line structures for steel lattice towers, wood and steel H-frames, and wood, concrete, and steel poles. He has been involved in the planning and design of overhead transmission and distribution lines.

Notable projects include Tesoro Office & Garage; ANP Generation Plant; UTSA Downtown Campus; 345 kV Lon Hill-Coleto Creek Transmission Line; Federal Courthouse; Cibolo Creek Landfill; ARCO Refinery; Martinez Creek Wastewater Plant.

Title:

Vice President

Education:

Texas A&M University, B.S. in
Civil Engineering, 1981

Texas A&M University, M.S. in
Civil Engineering, 1983

Professional Registration:

Licensed Professional Engineer
in the State of Texas

Professional Affiliations:

American Society of Civil
Engineers (ASCE)

American Concrete Institute
(ACI)

Associated General
Contractors (AGC)

American Society for Testing
and Materials (ASTM)

Consulting Engineers Council
(CEC)

Professional Engineers in
Private Practice (PEPP)

Texas Society of Professional
Engineers (TSPE)

Chuck A. Gregory, P.E.

Chuck Gregory has over 18 years of professional civil engineering experience with specialization and expertise in the technical areas of Geotechnical Engineering, Environmental, and Construction Materials Engineering and Testing. He has designed structure foundations in rock and expansive soils; designed retaining walls and bulkheads; designed waste disposal sites; designed pavements for roads and airfields; installed geotechnical instrumentation including data reduction.

Mr. Gregory has engineering experience in municipal solid waste dating back to 1986. He served as project engineer on various Type 1 and Type IV municipal landfills. His activities included preparation of the geotechnical aspects of landfill projects; inspections of liner installation; preparation of soil and liner evaluation reports, including well sampling to recover liquid specimens for analytical testing. Chuck's landfill experience includes the City of Brownsville Landfill, Standard Industries in San Antonio, and Browning Ferris Industries Landfill in Kerrville, Texas. He has performed numerous Phase I and II Environmental Site Assessments.

He has been involved in materials engineering applications for the design and evaluation of experimental test sections; operation and supervision of pilot plant operations; design and preparation of concrete mixes with various liquid and mineral admixtures; computer aided development of mathematical model to predict the strength of mortar; monitoring and testing of materials during construction; investigative failure analyses on asphaltic concrete and brick paver pavements; investigative failure analyses on building floor slabs; determination of in-situ strength of concrete by destructive and non destructive testing; performance and monitoring of precasting and post-tensioning concrete operations.

Chuck's duties as a staff engineer and project manager have consisted of supervision/performance of construction monitoring and testing services during construction of numerous one-story tilt-wall structures to several multi-story buildings ranging up to 42 stories. He has provided monitoring service during prestressed concrete fabrication and inspection operations, post-tensioning of concrete slabs, and batching operations for concrete and asphalt. He has personally performed monitoring services and has served as project manager on numerous precast fabrication projects. He has also performed sprayed-on fireproofing evaluation, conducted field mix adjustments during concrete placements, and field evaluations of bolted and welded connections for structural steel framing.

Chuck has successfully completed investigative analyses including evaluation of building floor slab distress, monitoring of deflection of elevated concrete slabs, assessment of fire damage of concrete, and evaluation of aggregate source as suitable aggregate for concrete.

He also has extensive experience in roofing technology and application inspection.

Title:

Manager, Rio Grande Valley

Education:

Texas Tech University, B.S. in
Civil Engineering, 1990

Texas Tech University, M.S. in
Civil Engineering, 1991

Professional Registration:

Licensed Professional
Engineer in the states of
Texas, Oklahoma, Florida,
Alabama, Mississippi, and
Tennessee
Pending - Arkansas &
Louisiana

Professional Affiliations:

American Society of Civil
Engineers (ASCE)

National Society of
Professional Engineers (NSPE)

Society of American Military
Engineers (SAME)

Chi Epsilon

San Antonio Manufacturers
Assn.
(SAMA)

North San Antonio Chamber
of Commerce

Anthony F. Adamo, P.E.

Anthony F. Adamo is Manager of the firm's Rio Grande Valley offices. He supervises the geotechnical staff and is responsible for client contact, presentations, proposals, and reports. Tony has ten (10) years professional experience in geotechnical engineering, project and construction management, geotechnical design, inspection of deep and shallow foundations, exploration for commercial, industrial, residential, and governmental projects.

Tony's professional experience includes the evaluation of pile or pier foundations for lateral, axial and tension loads; conducting roadway soil surveys for the design and improvement of new and existing roadways; performing geotechnical evaluations for residential and commercial structures to evaluate structural damage to the properties; performing geotechnical investigations to provide site preparation, pavement and foundation recommendations, and the evaluation of static-pile load test data of auger cast, timber, and precast concrete piles using both pile deflection and internal strain gauge data.

He also has experience in construction materials testing and Phase I and II environmental assessments.

Firms that he has provided services for include:

- Sprint PCS - Texas, Oklahoma & Alabama
- American Tower Corporation - Texas
- Central and South West Services - Texas & Oklahoma
- Eckerd Drug Stores - Texas
- HEB Grocery Stores - Texas
- Foley's - Texas
- Dashiell Corporation - Texas and Alabama
- Department of Transportation - Texas, Florida & Alabama
- Mercedes-Benz - Alabama
- International Paper - Louisiana and Alabama
- Extended Stay America - Florida, Alabama
- Grand Bay Resorts - Florida
- Chevron - Hawaii
- City of San Antonio, Texas
- City and County of Honolulu - Hawaii
- Waihuna Joint Venture - Hawaii
- PowerTel / InterCel - Alabama
- GTE / Contel Cellular - Alabama and Florida

Title:
Manager – Laredo office

Education:
Texas A&M University at Prairie
View, B.S. in
Civil Engineering, 1990

University of Texas at
San Antonio, M.S. in
Civil Engineering, 2001

Professional Affiliations:
American Society of Civil
Engineers (ASCE)

Mike T. Ghazawi, P.E.

Mike is the Manager of the firm's Laredo office and manages various Drash Consulting Engineers, Inc. projects.

Mike has ten (10) years of experience in geotechnical engineering, project and construction management, geotechnical design, inspection of deep and shallow foundations, exploration for commercial, industrial, residential, and governmental projects.

Mike's professional experience includes the evaluation of pile or pier foundations for lateral, compressive and tension loads; conducting roadway soil surveys for the design and improvement of new and existing roadways; performing geotechnical evaluations for residential and commercial structures to evaluate structural damage to the properties; performing geotechnical investigations to provide site preparation, pavement and foundation recommendations.

He also has experience in construction materials testing and Phase I and II environmental assessments.

Firms that he has provided services for include:

- Southwestern Bell, Texas
- Sprint PCS – Texas
- Harris County Flood Control District – Texas
- Central and South West Services – Texas
- Eckerd Drug Stores – Texas
- H.E.B. Food Stores – Texas
- Walgreen's Drug Stores – Texas
- Dashiell Corporation – Texas
- City of Houston – Texas
- San Antonio Independent School District – Texas
- Northside Independent School District – Texas
- North East Independent School District – Texas
- Houston Independent School District – Texas
- Humble Independent School District – Texas
- Pasadena Independent School District – Texas
- Deer Park Independent School District – Texas
- Chevron – Texas
- City of San Antonio – Texas
- City of Universal City - Texas

Title:

Manager, Environmental
Division

Education:

Miami University at Oxford,
Ohio,
B.A. degree in Natural
Science,
1978

University of Texas at El Paso,
Graduate Studies,
Environmental Science and
Geology, 1986-1988

New Horizons, Inc. at San
Antonio, Currently pursuing
MCSE (Microsoft Certified
Systems Engineer) degree

Professional Affiliations:

American Chemical Society (A

Air and Waste Management
Association (AWMA)

Joe A. Lambert

Joe Lambert has over 20 years professional experience in a wide variety of areas involving environmental areas. He has extensive experience in Phase I, II, and III site assessment and remediation projects. His duties at DCE as manager of the San Antonio Division include project investigations, evaluations, and proposals, plus overseeing on-site and laboratory testing.

Before joining DCE, Joe was Southwest Regional Manager with Laboratory Automation Solutions, Inc. where he was responsible for technical services and customer support pertaining to computerized scientific data systems (LIMS - Laboratory Information Management Systems).

He also worked as Assistant Laboratory Manager/Quality Assurance Director for Chemron Incorporated where he administered daily operations of an environmental testing laboratory. Joe was responsible for planning, implementation, and supervision of major analytical programs supporting a wide variety of environmental monitoring, safety, and remediation activities. He directed laboratory testing protocols established industry, EPA, and DoD specifications. Joe was responsible for personnel, authorizing purchases, interviewing, hiring, and staff reviews. He oversaw mid-level management training programs, corrective actions, and internal audits. Directed Quality Assurance activities. He drafted important company correspondence, proposals, reports, and contracts interfaced with clients, took part in business negotiations, provided technical assistance in marketing activities, and participated in company presentations.

Joe was the Regional Manager for Caleb Brett Incorporated, Intertek International, (Houston, Mexico City) prior to his employment at Chemron. At Caleb Brett Incorporated, he was responsible for six chemical inspection laboratories involved in the bulk petroleum transport industry. He supervised a staff of 38 technicians in inspecting, sampling, analyzing, and quality control of petroleum products including LPG, gasoline, crude oil, fuel oil, diesel, and other bulk commodities with locations in the USA and Mexico along the international border from Texas to California. Joe's duties included matters of personnel, safety, technical training, equipment purchasing, budget, client relations, data validation and reporting. He was involved in client presentations and represented the company as an international liaison and interpreter in contract negotiations with a number of U.S. Oil Companies and the Mexican government (Petroleos Mexicanos).

Title:

Manager Construction
Materials Engineering Division

Education:

Delta College, University City,
Michigan - 3 Years,
Engineering

Professional Certifications:

American Concrete Institute

Texas Department of
Transportation - Soils,
Concrete, Asphalt

Troxler Electronic Labs, Inc.

Seaman Nuclear Training

CPN Nuclear Training

Level 1 Field Technician

Roadway Testing Specialist
Level 1B (HMA)

Plant Operation Specialist
Level 1A (HMA)

Quality Management and Mix
Design Specialist Level II (HMA)

Alfredo (Fred) Belfort

Alfredo (Fred) Belfort has more than 23 years of experience in construction materials testing and inspection services. He has worked in all areas relating to soils, concrete, asphalt, reinforcing steel, structural steel, welding, dams, landfills, and geosynthetic and compacted soil liners.

Fred is Manager of the San Antonio Construction Materials Engineering and Testing Division and is responsible for all construction materials projects. He supervises the construction materials staff (laboratory and field) and is responsible for marketing, client contact, presentations, proposals, reports, and assisting in the firm's day to day activities.

Areas of expertise include:

- Project Management
- Field Sampling & testing Soils/Aggregates
- Earthwork Construction Observation
- Field Sampling Testing of Concrete, Mortar, and/or Grout
- Field Sampling and/or Density Testing of Asphalt Mixtures
- Laboratory Testing of Soils, Concrete, and Asphalt
- Deep Foundation Construction Observation
- Reinforcing Steel Placement Observation
- Coring and Thickness Determinations of Asphalt and Concrete
- Monitoring of Concrete Placement, Consolidation, and Placement
- Asphalt and Concrete Mix Designs
- Foundation Load Tests
- Concrete & Asphalt Batch Plant Inspection
- Prestressed & Post-tensioned Concrete
- Bolt-Torque Evaluation
- Structural Steel Observation
- Supervise QA/QC Field and Laboratory Services
- Geomembrane Liner QA/QC
- Masonry Inspection
- Spray Applied Fireproofing
- Dipstick - Floor Flatness Experience

Some of his projects include:

- Mesquite project, Gold fields Operating Company -Mesquite, California
- Terminal #4, Skyharbor International Airport-Phoenix, Arizona
- Taxiway - Phase 1, II, III - Stinson Municipal Airport - San Antonio, Texas
- Walmart Distribution Center (1,000,000 sq. ft.) - Mexico City, Mexico
- Downtown "Y" Elevated Highway (I-H 35) - San Antonio, Texas

Title:
Environmental Consultant

Education:
Southwest Texas State
University, Bachelor of Science
in Environmental Science,
1986

**Professional Certification,
Training and Continuing
Education:**

Texas Department of Health
licensed Individual Asbestos
Consultant #10-5409,
expiration 6/03/2002

Hazardous Waste Operations
and Emergency Response
(HAZWOPER) Training, OSHA
29 CFR 1910.120; University of
Texas at Arlington Center for
Environmental Research &
Training, 1992 (8-hour refresher
current).

Asbestos Abatement Project
Designer, Scientific
Investigation & Instruction
Institute, 40 CFR 763, Appendix
C, Subpart E, April 8, 2002.

Asbestos Abatement
Management Planner,
Scientific Investigation &
Instruction Institute, 40 CFR
763, Appendix C, Subpart E,
April 9, 2002.

Asbestos Abatement
Inspector, Scientific
Investigation & Instruction
Institute, 40 CFR 763, Appendix
C, Subpart E, April 9, 2002.

Asbestos Air Monitoring,
Scientific Investigation &
Instruction Institute, 40 CFR
763, Appendix C, Subpart E,
April 10, 2002.

David P. Young

David P. Young has over twelve (12) years of professional environmental experience with specialized knowledge in industrial hygiene issues.

David worked as a Project Manager and Senior Project Manager for ATC Associates Inc. in Dallas and San Antonio, Texas from December 1994 through October 2001. Duties included: supervising and conducting management activities, which included budget and scope of work development, budget tracking, delegation of personnel involvement, subcontractor procurement activities, client relations, supervision of field activities, data reduction and evaluation and presentation of findings to clients and regulatory agencies involving asbestos abatement, lead abatement, mold abatement, LPST investigations/remediation, and various hazardous and special wastes projects.

David was an Environmental Scientist with Fugro-McClelland before his employment with ATC. At Fugro-McClelland, he performed air monitoring and project coordination for asbestos abatement projects; field reconnaissance and report preparation for Phase I and II Environmental Site Assessments; performed soil and water field sampling activities and drilling; and conducted indoor air quality assessments.

Some of his projects include:

- Comprehensive asbestos and lead surveys of numerous US Postal Service facilities throughout south-central Texas
- Phase I Environmental Site Assessment for HB Gonzalez Convention Center expansion project in San Antonio, Texas
- Bio-remediation of hydrocarbon-impacted soils at Big Three Industries gas separation facility in Longview, Texas
- NEPA Assessments for Nextel and Western PCS cellular communication carriers
- Asbestos abatement consulting for San Antonio Housing Authority - Alazan Apache Courts IV, an 81-building housing development scheduled for demolition
- Over 25 Indoor Mold Assessments for Commercial, Educational, Governmental, Insurance, and Private Entities.
- Over 30 Confirmation Mold Surveys for Commercial, Educational, Governmental, Insurance, and Private Entities.

Title:

Project Manager
Environmental Division

Education:

University of Texas at San Antonio, B.S. in Geology
Currently in the Masters of Science program at the University of Texas at San Antonio

Professional Training / Certification:

40 hour OSHA Certificate

Activities:

Geological Society of America
American Association of Petroleum Geologist
AAPG Division of Environmental Geosciences
Student Geological Society

Tomas Hernandez, Jr.

Tomas Hernandez, Jr. is a Project Manager in DCE's Environmental Division. His duties include project management, report preparation for Phase I and II environmental site assessments; geologic site assessments; soil resistivity testing; supervising and performing soil and water field sampling activities and drilling. Tomas has assisted in several Critical Habitat Evaluations and identifications for Federal and State Threatened and Endangered Species in the Central and South Texas area. Previous experience includes installing water-monitoring wells for LPST facilities and geotechnical sampling.

Some of his projects include:

- HUD Environmental Assessment for HUD Colonias Initiative (HCI) Program for the Community Development Corporation of Brownsville
- Phase I Environmental Site Assessment for Wurzbach Parkway-Texas Department of Transportation
- Phase I Environmental Site Assessment for Spurs Training Facility
- Phase I Environmental Site Assessment for Southside Independent School District
- Section 404 Permitting for Audie Murphy VA Hospital Parking Lot Expansion
- Base Flood Elevation Determinations for Sprint PCS, Towers of Texas, Inc., Cingular Wireless, and VoiceStream Wireless
- NEPA Assessments for various developers and cellular communication carriers
- Geologic Assessments for various developers, cellular communication carriers, real estate, and architectural firms
- Over 300 Phase I Environmental Site Assessments for various developers, cellular communication carriers, real estate, and architectural firms
- Phase II Environmental Site Assessments for various developers, cellular communication carriers, real estate, energy, and architectural firms
- Geotechnical logging for commercial and governmental agencies

Title:
Geologist
Environmental Division

Education:
University of Texas at San Antonio, B.S. in Geology
Currently in the Masters of Science program at the University of Texas at San Antonio

Professional Training / Certification:
40 hour OSHA Certificate

Lyncole Ground System and Soil Resistivity Testing Certification

State Licensed Asbestos Air Monitoring Technician

State Licensed Asbestos Inspector

Contractor Safety Council of the Coastal Bend refinery training

Activities:
American Association of Petroleum Geologist

AAPG Division of Environmental Geosciences

Student Geological Society

Air & Waste Management Association

Paul E. Beckett

Paul E. Beckett is a Geologist in DCE's Environmental Division. His duties include project management, field reconnaissance, and report preparation for Phase I and II Environmental Site Assessments; geologic site assessments; ground system and soil resistivity testing; supervising and performing soil and water field sampling activities and drilling; conducting HAZMAT surveys; conducting indoor air quality assessments; air monitoring and project coordination for asbestos abatement projects; Lead Based Paint sampling and project coordination; utilizing CADD for preparation of technical figures for Environmental and Geotechnical projects; performing Geotechnical logging.

Some of his projects include:

- Geologic Assessment for Dial Communities, Inc.
- Geologic Assessments for Sprint PCS
- Geologic Assessments for Titan Towers
- Geologic Assessment for Calle & Associates
- Over 150 Phase I Environmental Site Assessments
- Phase I Environmental Site Assessments for Chesney Morales & Associates, Inc.
- Phase I Environmental Site Assessments for Titan Towers
- Phase I Environmental Site Assessments for Towers of Texas
- Phase I Environmental Site Assessments for Sprint PCS
- Phase I Environmental Site Assessments for American Tower Corporation
- Phase I Environmental Site Assessments for SBC, Inc.
- Phase I Environmental Site Assessments and Geotechnical logging for Foremark Real Estate Company
- Phase II Environmental Site Assessments for Coker United Methodist Church
- Phase II Environmental Site Assessments for Sprint PCS
- Phase II Environmental Site Assessments for Towers of Texas
- Phase II Environmental Site Assessments for SBC, Inc.
- Phase II Environmental Site Assessment for AEP, Inc.
- Phase II Sub-surface investigations for the Aquifer Storage and Recovery Project
- Geotechnical investigations for Lockwood, Andrews, and Newnam, Inc.
- HAZMAT Surveys for the Guadalupe Blanco River Authority
- Asbestos air monitoring for Lackland Air Force Base South Wherry Housing Demolition
- Asbestos abatement and Lead Based Paint project coordinator for Lackland Independent School District
- Asbestos abatement project coordinator for the City of Schertz
- Lead Based Paint Sampling for various cellular communication co-locate operations
- Indoor Air Quality Assessments for the Analytical Group
- Indoor Air Quality Assessments for the Broadway National Bank

Title:

Project Environmental
Scientist Environmental
Division

Education:

Southwest Texas State
University, B.S. in Clinical
Laboratory Science

**Professional Training /
Certification:**

40 hour OSHA Certificate

Certificate for IAQ
Microscopic Identification
of Mold (McCrone
Research Institute)

Certificate for conducting
IAQ Investigations
(American IAQ Council)

American Society of
Clinical Pathologist (MT)

National Committee for
Clinical Laboratory
Standards (CLS)

Activities:

American Indoor Air
Quality Council Member

Air & Waste Management
Association

Ryan K. DeBarros

Ryan K DeBarros has 3 years of professional environmental and microbiological experience with specialized knowledge in Mold Surveys. He is a Project Environmental Scientist in DCE's Environmental Division. His duties include field reconnaissance, report preparation, and project management for indoor air quality concerns including mold surveys; soil resistivity testing; utilizing CADD for preparation of technical figures for Environmental and Geotechnical projects.

Prior to DCE, Ryan was the supervisory microbiologist for Medplex Laboratories, Inc., in San Antonio, Texas. He oversaw daily operations, corrective actions, proficiency testing, quality control, quality assurance, and internal audits of a microbiology department in a clinical testing laboratory. He drafted important company correspondence and reports, interfaced with clients, took part in business negotiations, provided technical assistance in marketing activities, and participated in company presentations.

Prior to Medplex Laboratories, Inc., Ryan was a staff Clinical Laboratory Scientist for Christus Santa Rosa Hospital, San Antonio, Texas. He performed routine and proficiency testing, corrective actions, quality control, quality assurance, and internal audits in a clinical testing laboratory. Testing performed by Ryan included Bacteriology, Mycology, Parasitology, Serology, Chemistry, Hematology, and Coagulation. When called upon, he interfaced with clients, provided technical assistance to fellow employees and clients, and participated in company presentations.

During Ryan's tenure at Christus Santa Rosa Hospital, he also worked part-time at the Nix Hospital in downtown San Antonio, Texas. His duties included Bacteriology, Mycology, Parasitology, and specimen processing. He performed routine and proficiency testing, corrective actions, quality control, quality assurance, and internal audits in a clinical testing laboratory.

Some of his projects include:

- Over 100 Indoor Air Quality/ Mold Assessments for DCE
- Side-by-Side Sampling for Indoor Air Quality Concerns
- Third Party Observation of Indoor Air Quality Assessments
- Over 15 Phase I Environmental Site Assessments

Title:

Project Biologist
Environmental Division

Education:

University of Texas at San Antonio, B.S. in Biology and Minor in Chemistry
Classes in plant sciences and environmental ecology

Currently in the Masters of Science program for Environmental Science at the University of Texas at San Antonio

Professional Training /**Certification:**

40 hour OSHA Certificate

Susan Harris

Susan Harris is a Project Biologist in DCE's Environmental Division. Her duties include Phase I Environmental Site Assessments; Transaction Screen assessments; National Environmental Protection Act reviews; Critical Habitat evaluation and identification for federal and state listed Threatened and Endangered Species in Texas; Wetland Delineations for application of section 404 permits from the US Army Corps of Engineers; and report preparation and project management.

Some of her projects include:

- Environmental Assessment for O.E. Investments, Inc.
- Biological Assessment and Environmental Assessment for Cingular Wireless LLC
- NEPA and Habitat Evaluation for threatened and endangered species for a proposed apartment complex for Legacy Contractors
- Preliminary Habitat Evaluation for a proposed 213-acre property to be used for a park for the San Antonio River Authority (SARA)
- NEPA Assessment for analysis of habitat for threatened and endangered species for a four-mile long pipeline for Goldston Engineering
- Critical Habitat Evaluation and Identification for federal and state listed threatened and endangered species in Texas for SBC
- Critical Habitat Evaluation and Identification for federal and state listed threatened and endangered species in Texas for Legacy Contractors
- Wetland Delineation for the Audie Murphey VA Hospital
- Phase I Environmental Site Assessments, NEPA Assessments, and Critical Habitat Evaluation and Identification for federal and state listed threatened and endangered species in Texas for Towers of Texas
- Phase I Environmental Site Assessments and NEPA Assessments for Sprint PCS
- Phase I Environmental Site Assessments and NEPA Assessments for Titan Towers
- Phase I Environmental Site Assessments and NEPA Assessments for ArchComm Design, Inc.
- Phase I Environmental Site Assessments and NEPA Assessments for Cingular Wireless LLC

Title:
Senior Project Manager

Education:
University of Texas at
Austin, B.S. in Architectural
Engineering, 1971

University of Texas at
Austin, M.S. in Civil
Engineering, 1979

Professional Registration:
Licensed Professional
Engineer in The State of
Texas

Professional Affiliations:
American Society of Civil
Engineers (ASCE)

American Society for
Testing and Materials
(ASTM)

Chi Epsilon

Robert H. Holloway, P.E.

Robert Holloway has over 23 years of professional civil engineering experience relating to geotechnical investigations for numerous projects in the San Antonio and Austin metropolitan areas, along with other areas of Central and South Texas, including Big Spring, Abilene, Waco, Temple, Corpus Christi, Galveston, and the Rio Grande Valley. Projects have ranged from residential and commercial buildings to industrial plants and earthen dams. Foundation types include drilled piers, driven and auger-cast piling, individual footings and monolithic systems in soils ranging from soft, compressible strata to expansive clay soils and rock. Slope stability analysis, laterally loaded deep foundation systems, and computer applications are Bob's specialties.

Bob has been involved in the geotechnical design phases and soil liner quality control of municipal solid waste facilities including municipal waste facilities in San Antonio, Austin, Victoria, Corpus Christi, Alice, Robstown, Elgin, Ballinger, Luling, Gonzales, Cuero, and Brownsville.

His scope of involvement with municipal solid waste facilities have ranged from inception through public hearings and construction, to bentonite enrichment of soils and hydraulic conductivity testing of soils with leachates. He has also conducted electrical resistivity studies for evaluation of leachate migration. Bob was the principal geotechnical investigator on the Southeast Travis County Landfill Project (1987-1989), and was also a member of the geotechnical team for the Alamo Area Council of Government (AACOG) Municipal Solid Waste study conducted in 1991.

Flood control and water impoundment experience includes the fieldwork on an earthen dam in Mitchell County and the stability analysis of the Mitchell County project and an earthen dam in Ballinger. Other water impoundment experience includes the Frontera reservoir in the Rio Grande Valley and a water treatment plant in Hays County.

Bob has been involved with foundation designs for transmission line structures and for commercial structures along the Texas Gulf Coast ranging from single level residential to over 20 stories in height, supported on drilled pier and driven pile foundation systems. He recently completed an instrumented pile load test in Pensacola Beach, Florida shortly after hurricane Opal struck the Florida panhandle. He has also been involved with airport projects throughout Texas which include Mathis Field in San Angelo, Chase Field in Beeville, Corpus Christi International Airport, and Burnet County Airport in Burnet. Experience includes field CBR testing, sand-cone density testing, and plate bearing testing. Bob also served as Project Engineer on a 1,000 bed prison in Fort Stockton, Texas, and a 138kV transmission line from Falfurrias to Laredo, Texas.

Title:
Project Manager

Education:
University of Texas at San Antonio, B.S. in Civil Engineering, 1997

Professional Registration:
Licensed Professional Engineer in The State of Texas

Spencer A. Higgs, P.E.

Spencer Higgs has over 6 years of experience in the technical areas of Geotechnical Engineering, Environmental, and Construction Materials Engineering and Testing.

Higgs's Geotechnical Engineering experience consists of projects of variable size and complexity including: residential, commercial, and government projects with emphasis on shallow and deep foundations, pavements, slope stability, retaining wall structures, clay liner evaluations, multi-level structures, wireless communication towers in excess of 350 feet in height, aboveground storage tanks with capacity exceeding 5 million gallons, lift-stations, and bridges.

Higgs has designed foundations and structures over highly expansive clay soils, rock with karstic features, soft clays, and large depths of uncontrolled or dumped fill material. Higgs has also experience in lime-soil stabilization, potassium-soil stabilization, geogrids, geosynthetics, and forensic analysis with emphasis in expansive clay soils.

Higgs's Environmental experience consists of working on numerous projects requiring management of excavation or work activities in areas with contaminated soil and groundwater. Higgs was responsible for enforcement of site, health and safety plans, supervision of decontamination procedures and segregation of affected soils, and monitoring of the breathing zone to protect workers during construction in contaminated areas. Mr. Higgs has also conducted numerous Phase I Environmental Site Assessments.

Higgs's Construction Materials Engineering and Testing includes managing the testing from start to finish of the following phases: Earthwork, Concrete, Masonry, Reinforcing Steel, Structural steel welded and bolted connections, asphalt-treated base, and hot-mix asphaltic concrete. Mr. Higgs has personally performed field and laboratory testing of native and treated soils, non-destructive and destructive testing of concrete, shallow (spread footing and grade beam) foundation excavation inspections in fill soils, clay soils, and rock. Mr. Higgs has also conducted deep foundation inspections in fill soils, karstic rock, and expansive clay soils. Experience further includes reinforcing steel inspections and soil/material suitability during earthwork operations.

Title:

Project Manager
Geotechnical Engineering
Division

Education:

Bee County College
Engineering, 1992 – 1994

Texas A&M University, B.S.
in Civil Engineering,
1994 – 1998

University of Texas at San
Antonio, M.S. in Civil
Engineering 1998 – 2001

Professional Registration:

Licensed Professional
Engineer in The State of
Texas- N° 90125

Professional Affiliations:

American Society of Civil
Engineers (ASCE)

E. Allen Dunn, III, P.E.

Allen Dunn, P.E., is an Engineer in DCE's Geotechnical Engineering Division. Allen's duties include sample collection and classification, evaluation of geotechnical laboratory data, performing geotechnical engineering calculations, foundation design, pavement design, and preparation of foundation and site preparation recommendations and specifications.

Allen is experienced in all aspects of geotechnical engineering projects. Allen has experience in directing geotechnical drilling operations, sample collection, logging geotechnical borings, development of geotechnical testing programs, performing geotechnical laboratory tests, evaluation of geotechnical data, and preparation of geotechnical engineering reports. Allen is also experienced in forensics investigations involving geotechnical engineering aspects including field observations and measurements, documentation of distress, development and direction of investigation programs, analysis of data, formulation of possible solutions, and preparation of reports for each investigation. Additional experience includes concrete sampling, reinforcing steel inspection, pier inspection, and observation of stressing operations on slab-on-grade post-tensioned foundations.

Typical projects Allen has worked on include:

- Cellular communications towers
- Transmission and distribution poles
- Stand-alone retail buildings
- Commercial/Industrial warehouse facilities
- Residential structures
- City street projects

Title:

Project Manager
Geotechnical Engineering
Division - San Antonio
Office

Education:

University of Texas at San
Antonio, B.S. in Civil
Engineering, 1995

Professional Registration:

Licensed Professional
Engineer in the state of
Texas - 89228

Professional Affiliations:

American Society of Civil
Engineers (ASCE)

National Society of
Professional Engineers
(NSPE)

Laura J. Campa, P.E.

Laura Campa is a Project Manager in the San Antonio office and manages various DCE Projects. Laura has over seven (7) years experience in the areas of Geotechnical Engineering, Environmental Engineering, and Construction Materials Engineering and Testing.

Laura's Geotechnical Engineering experience consists of residential and commercial projects of varying size. Laura's experience has included developing recommendations for shallow and deep foundations, pavements, retaining wall structures, and site improvements in the expansive clays of central and south Texas. Laura also has forensic experience having investigated numerous residential and commercial properties across the State of Texas.

Laura's Environmental Engineering experience includes landfill permitting, underground storage tank removal and replacement projects, and aquifer slug tests. Ms. Campa has also conducted Phase I and Phase II Environmental Site Assessments.

She also has Construction Materials Testing experience including Earthwork and Concrete. Ms. Campa has performed field and laboratory work in both areas.

Firms that she has provided services for include:

- B.F.I. – Texas
- Waste Management – Texas
- City of San Antonio – Texas
- San Antonio Water System - Texas
- San Antonio Independent School District – Texas
- Valero Energy Corporation – Texas
- Bechtel Corporation – Texas
- Archon Group – Texas
- T- Mobile – Texas
- USAA Property and Casualty Insurance – Texas
- Allstate Insurance Company - Texas

Title:

Manager –
Transmission/Distribution
Division

Education:

New Mexico State
University, B.S. in Electrical
Engineering, 1963

Professional Registration:

Licensed Professional
Engineer in the states of
Texas (44864), Arkansas,
Oklahoma, New Mexico,
Arizona, Wisconsin,
Indiana, Ohio, California,
Minnesota, Nevada

Professional Affiliations:

Institute of Electrical and
Electronic Engineers (IEEE)
Industry Applications
Society (IAS)
Power Engineering Society
(PES)
National Society of
Professional Engineers
(NSPE)
Sigma Tau - Honorary
Engineering Fraternity
Eta Kappa Nu – Honorary
Electrical Engineering
Fraternity

Larry E. Ancell, P.E.

Mr. Ancell has over 35 years of experience as an engineer specializing in the design, construction and operations of electric utility systems. As a registered engineer in Texas, and ten other states, he brings expertise in power systems studies, facility design, system operations and maintenance as well as upgrading and converting existing substations. Mr. Ancell is proficient in designing electric substation, distribution and transmission facilities, including transmission and distribution substations up to 150 MVA, overhead and underground distribution facilities from 2.4kV to 24.9k-V, and overhead transmission lines from 69kV, 115kV and 138kV. He has prepared distribution system audits of electric systems focusing on the practices of utility engineering, construction and operating departments; provided day to day operating assistance to electric utilities in addressing operating, engineering and construction problems and issues; participated in the evaluation of distribution, transmission and substation systems for electric utilities and military bases.

Presented below are various projects that Mr. Ancell has been either design or principal engineer.

Brazos Electric Power Cooperative – 1979-1981. Provided or supervised design of about 30 distribution substations. Services included increasing capacity and converting from 69kV to 138kV, modifying substation designs to accommodate two-trailer mobile units, modification to expand 69kV to 138kV buses.

Granite Mountain Substation Modifications. Pedernales Electric Corporation, Inc. Marble Falls, Texas. 1991-1992. Project included upgrading and converting an existing 69kV to 12.47kV single transformer substation to a 138kV to 24.9kV, two transformer installation. Existing site was expanded to accommodate the new facilities. Site work, foundation design and expanded fence facilities were required.

Expansion of Calallen Substation, South Texas Electric Cooperative, Inc., near Corpus Christi, Texas. 2000-2002. Assisted the utility in planning and designing the expansion of the 69kV to 12.47kV Calallen Substation on the existing site located north of Corpus Christi, Texas, near the community of Calallen.

Alcoa Sandow & Three Oaks Mines, Four Substation Projects and new 138kV line, near Rockdale, Texas, Ongoing Project. 2002-2003. Designed duties to increase the transformer capacity at the existing 138kV to 34.5kV Pecan Orchard Substation by replacing the 3.75 MVA power transformer with a new 12/18 MVA unit. Installed a new 138kV circuit breaker and associated facilities in the existing source 138kV line adjacent to Pecan Orchard Substation. Installed a complete 7.5 MVA, 138kV to 22.9kV substation under the new 138kV line with a direct tap to the 138kV line conductors. Installed a complete 3.75 MVA, 138kV to 34.5kV substation under the new 138kV line with a direct tap to the 138kV line conductors.

Vista-Freeman 69kV Transmission Line. Riverside Public Utility Department. Riverside, California. 1994-1996. Coordinated the design and construction of approximately 10 miles of 69kV transmission line in Riverside, California. The project required new construction of poles, conductor, and fiber optic cable; the reconstruction of an overhead wood pole transmission line to accommodate an additional 60kV circuit, and replacement of most of the existing wood poles with taller wood or tubular poles.

Transmission Line Design. Various Electric Cooperatives. Southwestern United States. 1978-1983. Design of 69kV and 115kV single pole and H-frame transmission lines.

Title:

Senior Electrical Line
Designer Transmission &
Distribution Division

Education:

San Antonio College,
Associate of Science,
1968

Southwest Texas State
University,
San Marcos, Texas

Elmer E. Rigdon, Jr.

Elmer "Sonny" Rigdon has over 40 years of experience in the electric utility industry. He has been responsible for design, materials specification and procurement, and construction supervision of transmission projects for the last 20 years. Sonny has designed lines on wood, concrete, and steel structures. Before retiring from City Public Service (CPS) in San Antonio in 1991, he served as the engineering department's reviewer of final design plans and field coordinator for construction. He has performed electric and magnetic field (EMF) measurements at numerous substation and transmission line sites.

Sonny has been the senior designer on a number of 60 kV, 138 kV, and 345 kV transmission line projects. Notable projects include forty (40) miles of double circuit 345 kV/138 kV for Central Power & Light company (CPL) from Harlingen switching station to Rio Hondo switching station, ninety-six (96) miles of 138 kV on tubular steel poles from Dilley to Laredo, Texas, and ninety (90) miles of 138 kV on tubular steel poles from Laredo to Falfurrias, Texas.

Sonny served on the staff of St. Phillips College (Department of Electrical Trades) as an instructor during the 1980-81 school year.

Sonny currently supervises the technical staff for the firm's transmission & distribution line projects.